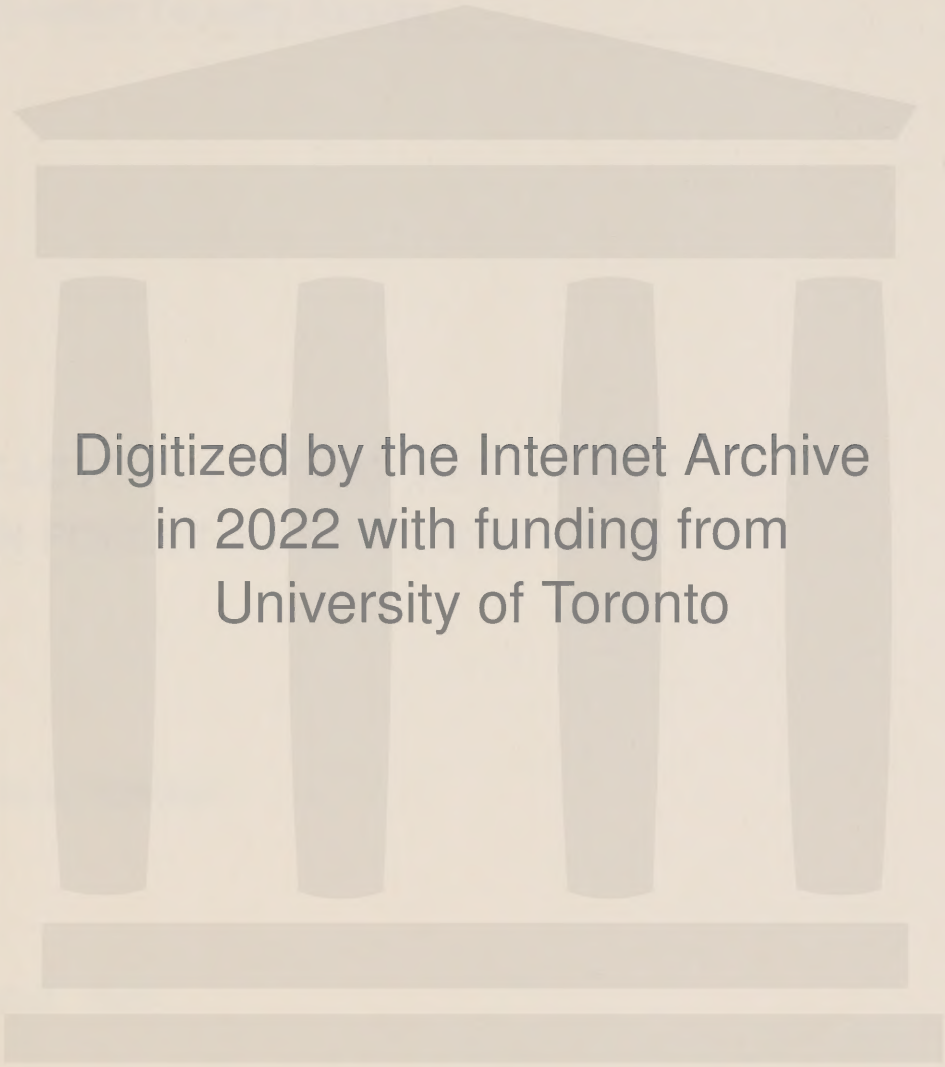

ENVIRONMENT CANADA
Canadian Forestry Service

FACTORS LIMITING INVESTMENT IN FOREST MANAGEMENT

FINAL REPORT

JUNE 1981

Peat, Marwick and Partners
Management Consultants

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June 15, 1981

Mr. F.L.C. Reed
Assistant Deputy Minister
Canadian Forestry Service
Environment Canada
Place Vincent Massey
351 St. Joseph Blvd.
Hull, P.Q.
K1A 0E7

Dear Mr. Reed:

Re: Study of Impediments to Forest Management Investment

We are pleased to submit our final report on "Factors Limiting Investment in Forest Management".

The purpose of the study was to investigate the impediments limiting provincial and private funding of forestry and to determine what federal options could lessen or overcome these constraints. An Executive Summary in front of the Report highlights our major findings and recommendations.

We appreciate the opportunity to assist the Canadian Forestry Service in formulating policy in this important field.

Yours very truly,

PEAT, MARWICK AND PARTNERS

Peat, Marwick & Partners.

Peat, Marwick and Partners

FACTORS LIMITING INVESTMENT IN FOREST MANAGEMENT

Peat, Marwick and Partners

FACTORS LIMITING INVESTMENT IN FOREST MANAGEMENT

INDEX

I - EXECUTIVE SUMMARY

This study investigates the impediments limiting provincial and private funding of forestry and determines what federal options could lessen or overcome these constraints.

IMPEDIMENTS LIMITING PROVINCIAL FUNDING OF FOREST MANAGEMENT

The study identified factors which inhibit the investment performance in forestry at the provincial level, including:

1. Lack of Control Over Budget Allocations. Provincial forestry authorities lack complete control over the determination of the total provincial budget allocated to forest management.

2. Short-term Budgeting. Provincial budgets are drawn up with a 1 to 2 year time horizon which is not consistent with the long term requirements of forestry programs.

3. Discontinuity of Federal Funding. Provincial forestry efforts would be further encouraged by improved continuity in federal funding under present cost-sharing arrangements.

4. Incompatibility of Federal Funding with Provincial Goals. The objective of federal funding does not always coincide with provincial forestry objectives.

IMPEDIMENTS LIMITING PRIVATE FUNDING OF FOREST MANAGEMENT

The study revealed that private funding of investments in forest management is hindered by the following considerations:

1. Wood Scarcity is Not Universally Believed by Industry. There is a variation in the perception of the degree to which wood is becoming

scarce over the medium to long term. As a ressult, the degree of effort to improve forestry management is not uniform across all segments of the industry and across all regions.

2. Investment Risks are Too High and Payback Periods Too Long. With payback periods approaching 60 years or more, combined with risks due to loss or damage from natural causes, the private sector is reluctant to commit its own resources to reforest even privately-held land.

3. Provincial Timber Pricing Policies. Provincial stumpage policies have an influence on the prices charged for wood from private lands. If Crown prices are set without adequate recognition of changes in demand and supply conditionns, the private sector may not receive prices for its own wood at levels sufficient to encourage greater forest management investment.

4. The Nature of the Market for Small Wood Lot Production. Small wood lot owners face many problems in the distribution and marketing of roundwood and therefore are discouraged from increasing their participation in generating additional supply over the longer term.

IMPEDIMENTS COMMON TO THE PROVINCES AND TO INDUSTRY

The study identified impediments common to the provinces and industry, including:

1. Lack of Public Awareness. The public is not sufficiently informed concerning the need for greater forest management expenditures. Without an adequately informed public, provincial political authorities are not being encouraged to shift relatively more government resources to forestry.

2. Insufficient Technical Knowledge. Greater technical knowledge is required regarding:

(1) The appropriate species for Canadian conditions; and

(2) the appropriate silvicultural treatments for various species in the different regions of the country.

3. Lack of Well-Trained Manpower. There are insufficient numbers of well-trained foresters and technicians and there is concern that the supply is not increasing at a rate sufficient to meet forest management requirements.

4. Selected Shortage of Nurseries and Nursery Stocks. Lack of sufficient supplies of seedlings, seed orchards, and nurseries in general are affecting forest renewal programs in some parts of the country.

FEDERAL POLICY OPTIONS

The study finds that many of these impediments are insurmountable without federal government action. Recognizing the jursidictional limitations on federal policy in forestry, the study suggests that federal action be aimed at:

- convincing each participant to increase its own level of investment;
- supplying additional funding to the provinces, when and where appropriate;
- coordinating the activities of all participants towards the achievement of national goals.

In the short-term, the federal government should:

- continue to provide financial assistance to the provinces to enable them to reduce and eliminate bottlenecks to the expansion of forest management programs;

- develop communications/education programs to improve the understanding of the provinces, the industry and the public of the importance of forestry to the economic well-being of the country.

In the long run, federal policy should:

- broaden and deepen public information programs to explain the value of reforestation;

- assist provincial forestry officials in developing a strong socio-economic case for increased provincial funding;

- give widespread dissemination of the technical possibilities of increasing the productivity of forest lands;

- encourage greater research in genetics, forest management techniques, fire, pest and disease control.

II - STUDY BACKGROUND AND OBJECTIVES

II.1 Background

Increasingly, governments and industry are concerned that the level of forest management, and in particular, of forest renewal, is insufficient to meet the economic and social goals of the provincial and federal governments. These concerns have been the topic of a number of national conferences, seminars and studies directed to determine the appropriate management of the Canadian forest resource and the need for improved government policies, at the provincial and federal levels.

Several critical issues remain to be settled, namely (1) What is the appropriate level of forest management investment and how should it be determined? (2) Who should finance it and ultimately who should pay for it? (3) What mechanism or mechanisms should be used to fund it?

During the last twelve months, two further studies have been commissioned. The Canadian Council of Resource and Environment Ministers (CCREM) study entitled "Funding Mechanisms for Forest Management", which examines mechanisms by which federal government funds might be directed to forest management and identifies the implications of each mechanism. The Canadian Forestry Service commissioned this study titled "Study of Impediments to Forest Management Investment". The Terms of Reference for this second study specifically stated that the work should complement "A Study of Funding mechanisms for Forest Management" and address critical issues not covered in that report.

This study investigates the impediments limiting provincial and private funding of forestry and determines what federal options and strategies could lessen or overcome these constraints.

II.2 Objectives

The objectives of this study are to determine why expenditures on forest management by public and private forest land owners are at levels considered to be insufficient to satisfy the long term interests of the country.

In order to meet these objectives, we focused on the following questions:

1. How are the provinces and the private sector responding to the need for greater investment in forest management?

2. What is inhibiting each sector from generating a higher level response?

3. How can the federal government eliminate or reduce constraints to enlarged forest management in the provincial and private sectors?

II.3 Structure of the Report

The report begins by explaining how the consultants conducted the study, including interview strategy. By way of background, it discusses very briefly the performance of the provinces and the private sector in forest management. The bulk of the report then analyzes specific impediments facing the provinces and industry and discusses the degree to which these impediments are insurmountable to these two participants. Finally, the report concludes with a discussion of the options available to the federal government to eliminate or reduce these impediments.

III - STUDY APPROACH

III.1 Background

In response to a request, we presented a proposal to Environment Canada, Canadian Forestry Service, entitled, "Study of Factors Limiting Investment in Forest Management". The engagement was supervised by the client committee composed of representatives from the Canadian Forestry Service, Department of Industry, Trade and Commerce, Department of Regional Economic Expansion, Treasury Board, Department of Finance and Ministry of State for Economic Development. During preliminary discussions with this committee, the following changes to the proposal were requested by the committee and were incorporated by the consultants:

- the original proposal called for Phase 1 preliminary personal interviews in British Columbia, Ontario, and Quebec; New Brunswick was added;

- staffing for the assignment, originally emphasized consultants with experience in the forest products industry, the client requested that the staffing give greater weight to financial and economic experience;

- in conjunction with the above, we were requested to give equal weight in the interviews to discussions with government officials with budgetary responsibilities and to corporate executives with financial responsibilities as well as those individuals with forest management responsibilities;

- prime emphasis was to be placed on determining underlying issues influencing investment decisions, rather than undertaking a statistical and quantitative measurement of their influence.

III.2 Conduct of Study

The study was conducted in two phases. The first phase was a literature review (see Appendix B) and a preliminary round of interviews in British Columbia, Ontario, Quebec, and New Brunswick. This initial interview program and literature review were designed to formulate basic hypotheses about funding impediments.

In the second phase, the consultants conducted interviews on the basis of specific questions arising out of the issues revealed in the first phase. (See Appendix C for questionnaire.) Personal interviews conducted with government and industry representatives in British Columbia, Alberta, Ontario, Quebec, New Brunswick, Nova Scotia, and Newfoundland. We also conducted telephone interviews with government officials in Saskatchewan, Manitoba, and Prince Edward Island. In total, there were 65 individuals interviewed in the study, some of whom were interviewed in both phases in order to provide greater clarification and insight into the relevant issues. A list of those interviewed can be found in Appendix D.

The second round of interviews examined the hypotheses developed earlier in Phase One. Respondents were questioned regarding the relative significance of each impediment and the degree to which each impediment appeared insurmountable and why this was or was not the case. The interviews then probed provincial and industry representatives as to the possible ways in which the federal government might contribute to a reduction or elimination of these constraints.

III.3 Criteria Used in Establishing Interview Program

In close consultation with the client committee, we developed criteria for choosing a list of individuals to be interviewed. Individuals were chosen on the basis of:

- Provincial/Regional Representation. Primarily, the consultants concentrated on the major wood producing regions of the country;

namely, British Columbia, Ontario, Quebec and New Brunswick, which together comprise approximately 80% of wood produced in the country.

- o A Mixture of Forestry and Financial Experts. At the industry level, the consultants chose corporate representatives responsible for woodlands operations and for financial management. At the provincial level, the consultants interviewed senior policy makers in the ministries responsible for forestries, and treasury and budgetary officials responsible for advising provincial cabinets on allocating funds for forestry programs. Also, at the federal level, the consultants selected experts on corporate taxation and federal/provincial programs as they relate to the forest sector.

- o Structure of Industry. Within the private sector, the consultants chose representation from the large integrated companies, industry associations, the small independent wood products manufacturers and woodlot owners and associations.

III.4 Interview Strategy

In order to obtain the fullest cooperation of the respondents, the role of the consultant was clearly developed at the outset with all interviewees. The consultant was portrayed as totally independent and acting as a neutral conduit. This permitted the respondent to state his ideas, attitudes and perceptions freely. As a result, the consultants developed an understanding of the individual concerns, perspectives, and attitudes as they existed in the past, and how they have developed to the present time. The consultant attempted to stimulate reaction to the topics set out in the Terms of Reference and to encourage a free flow of ideas with respect to other possible factors.

All those interviewed were supplied with copies of their interview notes and were given the opportunity to reflect on the interviews and to provide additional comments or new ideas. Many respondents reported back either in writing or by telephone. Their comments were recorded by the consultant and

were incorporated into the interview notes. In all cases, the respondents demonstrated a high degree of interest in the subject and were very cooperative.

Our interview notes were provided to the Canadian Forestry Service (C.F.S.) after each phase of the interview program, and the consultant and the C.F.S. representative had an opportunity to discuss these findings.

Presentation of Interview Results

In Sections V, VI, and VII, we report on the results of our interview program. The results are presented, initially, in the form of a "playback" of the issues discussed during the interviews. Thus, the reader is able to appreciate the complexity of some issues, and more importantly, the variations, and sometimes conflict of views, regarding the significance of each impediment. In an industry both diverse, geographically and in terms of end products, it is vital to have an understanding of how the participants view the importance of perceived impediments to better forest management.

Having revealed the results of our interviews, we then proceed to provide an interpretation of how certain factors limit investment in forestry. In cases where the interview results do not appear to conform to logic or paint a confusing picture or inconsistent approach, we attempt to provide a clearer understandinng of the way in which investment is or is not curtailed. Where we are clearly unable to resolve conflicting or confusing views originating during the interviews, we can only record this fact and suggest that additional study of the particular issue is required.

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EXHIBIT IV-1

INVENTORIED FOREST LAND AREA BY CLASS, 1976

(thousand km^2)

Province or Territory	Provincial Crown (thousand km^2)	%	Federal Crown (thousand km^2)	%	Private (thousand km^2)	%	All Ownerships (Thousand km^2)	%
Newfoundland	81	94.2	--	-	5	5.8	86	100
Nova Scotia	9	23.7	--	-	29	76.3	38	100
New Brunswick	27	44.3	--	-	34	55.7	61	100
Quebec[1]	338	90.6	--	-	35	9.4	373	100
Ontario	384	89.3	4	0.9	42	9.8	430	100
Manitoba	130	97.7	1	0.8	2	1.5	133	100
Saskatchewan	78	97.5	2	1.5	-	-	80	100
Alberta	201	99.0	2	1.0	-	-	203	100
British Columbia	474	98.3	3	0.7	5	1.0	482	100
Northwest Territories	-	-	33	100.0	-	-	33	100
Yukon	-	-	67	100.0	-	-	67	100
Canada	1722	86.7	112	5.6	152	7.7	1986	100
Per Cent	87		5		8		100	

1. Inventory details for approximately 179,000 km^2 in Quebec are not yet available, thus Quebec is understated.

Source: Canadian Forestry Service.

IV - RESOURCE OWNERSHIP AND MANAGEMENT

Before dealing with specific impediments to forest management expenditures, it is instructive to review the salient facts concerning resource ownership and management. The federal and provincial governments act as resource managers, regulators, landowners and shareholders. Private industry is also involved as owners and resource managers, in addition to being harvesters, processors and marketers of products.

IV.1 Ownership of the Resource

Exhibit 4-1, opposite, gives data on inventoried forest land area by ownership class. Over 87% of all forest land in Canada is owned by the provincial governments. Federal government agencies administer 5%, mostly situated in the territories, national parks and Indian reservations. The remaining 8% are privately owned by corporations, farmers and other individuals. Privately held forests are concentrated in Vancouver Island, Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island. These lands include some of the most productive and accessible forests in the country.

Private forests in central and eastern Canada (New Brunswick, Nova Scotia and Prince Edward Island) are held by several hundred thousands of individuals in small blocks, most of which are smaller than 40 hectares. An increasing number of small forested properties are held by individuals whose primary interest is other than in growing and harvesting timber.

IV.2 Management Responsibility on Crown Land

With the exception of Nova Scotia, New Brunswick and P.E.I., the provincial governments own and administer about 90% of the forest lands within provincial borders. The provincial governments manage the development of their forests through:

1. long term leasing of Crown land to private sector interests for agreed management practices and programs;

2. the granting of short-term cutting rights to provincial Crown timber on the leased lands;

3. the levying of charges on the timber extracted from provincial Crown lands. Such charges are variously described as stumpage charges, royalties, etc.

The control of cutting rights allows the provinces to promote the full harvesting of the annual allowable cut (AAC) and the optimum allocation of harvested timber in relationship to the location of mills. The determination of timber pricing policies on Crown land allows the provinces to receive a return from the industry for the use of Crown forest resources.

Provincial governments are also variously involved in management of private forests through property taxation, zoning, extension services, forestry incentives, regulations, timber allocation priorities, sponsored timber marketing boards and woodlot owners association.

Furthermore, provincial governments are not only involved in and responsible for producing timber crops and encouraging a viable forest products sector in their provinces. They must also determine the best mix of land uses, between forest and non-forest related activities.

Federal responsibilities are confined to management activities in national parks, Indian reserves, the Yukon and N.W.T.

IV.3 Private Ownership Patterns in the Forest Products Industry

The ownership structure of the Canadian forest products industry is very diverse. The industry is composed of:

- small, independent family-run firms and small woodlot owners;
- large, independent, privately-held firms;
- large, public corporations producing only forest products and usually operating on an integrated basis (i.e. harvesting, processing and marketing forest products);
- large, public corporations, with diverse corporate interests which includes operations in other industrial sectors; sometimes, these companies are referred to as "conglomerates".

The forest products industry is highly integrated in order to achieve economies of scale, to reduce overall wood costs and to improve production and marketing operations. Changes in technology have increased the minimum average plant size needed for efficient operations. As a result, the capital now required for the development of new facilities is invariably large and in the case of new pulp mills, exceeds the financial capability of all but the largest firms.

This trend towards greater integration in the industry can have positive implications for the expansion of forest management activities in Canada. Larger, integrated companies would normally have a significant stake in maintaining and expanding the respective wood supply base in order to utilize fully the high level of capital employed in downstream activities, such as pulp and paper production.

With this background in resource ownership and management responsibility, we turn to a review of the state of forest management today.

IV.4 Depletion of the Resource Base

Canada continues to exploit much of its productive forest lands to the point where annual forest depletion exceeds forest renewal. Harvesting claims approximately 800,000 hectares yearly, while many more hundreds of thousands hectares are lost to fire, disease and insects. Only 70-80% of this annual reduction is replaced through public and private investment in forest renewal

plus natural regeneration. As a result, there is a substantial backlog of land to be reclaimed, estimates range as high as 25 million hectares.

This reduction or depletion in the resource base is a cause for concern for the forest products industry. Continued escalation in the Canadian costs of extraction and delivery of wood is of growing concern. And, expansion into previously unallotted timber resources often means a further escalation in costs, since these areas are often quite distant from current operating mills. Thus, as the backlog of previously cutover lands increases, the industry will be forced to extend its supply network into remote areas, thereby incurring greater costs. In some parts of the country, such as New Brunswick, there are no opportunities to develop virgin forests, since uncommitted timber does not exist; in the absence of improved forestry, the industry faces a severe reduction in supply over the near to medium term.

The forest sector depends on achieving a balance between depletion and regeneration in the longer run. Reducing the rate of harvesting would help achieve this balance but at the expense of foregoing the opportunities for greater expansion into international markets. Public and private interests lie in the direction of increasing forest regeneration in order to capitalize on international trade opportunities.

In light of the depletion of Canadian forest resources, the federal and provincial governments have initiated policies aimed at forest renewal.

IV.5 Recent Federal Government Responses

In 1969, the Department of Regional Economic Development (DREE) was established to coordinate and administer a wide array of federal assistance programs, to promote employment creation and regional economic development. However, it was not until 1974 that forestry was adopted as a special regional economic development mechanism through a series of DREE forestry sub-agreements. All provinces except Alberta, Manitoba and Prince Edward Island have concluded one or more DREE federal/provincial forestry subsidiary

agreements. The federal cost-share varies by province reflecting the economic development/employment creation forces of the DREE agreement although not necessarily forest management requirements.

Federal payments to provinces for forest management, during 1974 to 1980, total just over $200 million. Most of these funds were spent on access development as well as protection and reforestation. Recent agreements provide for much larger allocations to be spent on reforestation and less on forest roads. The terms and contents of the forestry subsidiary agreements vary from province to province largely reflecting provincial priorities in the context of DREE's criteria which also vary among the provinces.

IV.6 Provincial Governments Response

In response to the need for greater forest regeneration, the provincial authorities have, in varying degrees, used their respective management tools to effect changes in forest management. The following paragraphs highlight the nature of these changes.

The provinces have acknowledged their responsibility for conducting forest management on Crown land. In Ontario, for example, the province enters into contractual agreements with certain forest products companies whereby the company undertakes forest management practices on behalf of the province. The province plans to have a significant portion of the licenses of the nine pulp and paper companies operating in the province converted into Agreement areas. The Ontario Agreements, for example, are for twenty years, but at five year intervals company performance is evaluated and if found satisfactory, the Agreement is extended. The province, for its part, assumes responsibility for basic funding of such major costs as road construction, site preparation, planting and stand tending.

Some of the provinces are also introducing basic incentives to encourage the industry to practice intensive forest management, usually undertaking forestry programs at its own expense. For example, British Columbia has a system of permitting the industry to increase its annual allowable cut in exchange for additional silvicultural treatments; Ontario permits a

reduction in normal stumpage charges for treatments conducted solely at the industry's own expense.

IV.7 Performance Falls Short of Goals

By 1979, expenditures by both levels of government and industry combined was estimated at $220 million on reforesting, stand tending and protection. The CCREM report entitled "Forestry Imperatives for Canada" indicated that about $440 million annually (in 1979 dollars) would be necessary to ensure adequate reforestation, to begin work on the backlog of unstocked land and to conduct a program of tending stands in need of silvicultural work.

While progress is being made to augment the level of forest management, and in particular, forest renewal, it is generally agreed that spending is insufficient to meet the long term economic and social goals of provincial and federal governments. There continues to be inadequate attention paid to neglected cutover lands, despite the fact that much of this land is located close to existing mills. As for areas under direct provincial responsibility, performance, although improving, falls short of industry and provincial forestry service expectations. In some cases, land held in fee simple, which one would expect the motivation for investment would be the greatest, has not been adequately managed. Finally, numerous farm wood lots in Ontario, Quebec and the Maritimes are almost completely unmanaged; thereby denying the country the opportunity of realizing the benefits of utilizing this valuable source of timber supply in the longer run.

In the following sections, we examine the reasons why provincial and private sector performances are insufficient.

V - IMPEDIMENTS LIMITING PROVINCIAL FUNDING OF FOREST MANAGEMENT

In this section, we analyze the factors constraining increased funding in forest management on provincial Crown land. Using the Terms of Reference, our literature review and material gathered in our interviews, we formulated various hypotheses concerning why provincial governments do not invest sufficiently in forestry. These hypotheses were then tested by means of probing interviews of government and industry officials. The findings are presented here along with the consultants' interpretation as to their relative importance as an impediment.

The following impediments have been suggested as factors inhibiting greater provincial investments in foresty:

A. Impediments Internal to the Provinces:

1. Competition for Funds: Provincial forestry officials do not have adequate control over the determination of annual amounts of provincial funds available to forestry programs.

2. Short-term Budgets: Provincial budgets are drawn up with a short time horizon, one to two years. This short term planning horizon is not consistent to the long term nature of implementing forestry programs.

3. Provincial Stumpage Charges: In provinces where stumpage charges are relatively low or nonexistent and hence direct forest resource revenues are also low, those responsible for provincial forest management have inadequate access to funds for investment in forestry.

4. Fluctuations in Revenues from Forest Products Industry: Fluctuations in the forest products market and the corresponding fluctuations in provincial forest revenues tend to reduce the provinces' ability to fund forestry programs on a sustained basis.

B. Impediments Arising Out of Federal/Provincial Fiscal Arrangements:

5. Use of Federal Funds to Displace Provincial Funds: Federal funding of part or all of provincial forestry programs tends to displace provincial funding, which would otherwise be allocated to forestry, rather than increase the total investment.

6. Discontinuity in Matching Federal Funds: The failure of the federal government to provide continuous funding under cost-share arrangements frustrates provincial efforts in forestry.

7. Incompatibility of Federal Funding with Provincial Goals: The objective of federal funding does not always coincide with provincial forestry objectives.

The importance of each impediment in terms of its impact on provincial decision-making is discussed in the following sections.

V.1 Competition for Funds with Other Provincial Departments

Provincial officials suggested that short-term considerations tend to deflect the provinces from its long-term commitment to increased spending on forest management. They noted that shifts in budgetary priorities in favour of such areas as health, energy, or transportation may, from time-to-time, reduce the amount of funds available to forestry programs.

Specifically, government officials in the Atlantic provinces stated that the financial needs for their provinces' social and economic programs make it difficult for these provinces to allocate the desired level of funds for forest management. Consequently, these provinces rely heavily on federal assistance/grants for forest management; otherwise, it was stressed that very little in the way of provincially financed forest management activities would take place.

In Ontario, Quebec and British Columbia, treasury officials suggested that, since the trend over time suggests that the forest industry may make up a declining proportion of the employment base in each province, it will likely be difficult to justify increased investment in forest management over the longer haul. The implication of this statement is that future forestry budgets are and will increasingly be predicated on some measure of the importance of the industry to the provincial economy.

While it appears that forestry officials in the major wood-producing provinces are capable of effectively arguing the case for forestry funding, they have to contend with equally compelling arguments from their counterparts in other provincial ministries. And, often their success in these internal budget debates rests on the capabilities of those in charge of forestry in making the case for more funding in cabinet, and the perception at that level of the significance of forest management investments to the electorate.

V.2 Short-term Budgeting

Provincial forestry officials consistently made the point that all governments have a short tenure and therefore are unlikely to have strong motivation to commit funds on a long term basis for forest management. This is important, because the planning and implementation of forestry programs require long term funding commitments. These foresters expressed dissatisfaction with the fact that, with the exceptions discussed below, provincial budgets were drawn up with a time horizon of one to two years, thereby providing provincial cabinets the opportunity to alter budget priorities on a relatively short term basis. As a consequence, forestry planning activities are frustrated.

All departments in government are subject to short-term shifts in political priorities, for governments have had always to allocate scarce financial resources to meet new and different demands. In the case of forestry, this fact is an important impediment since forestry, by its nature, requires long term commitments. One way to reduce the impact of shifts in budget

priorities is to establish special funds for forestry or develop long term funding commitments through contractual arrangements for performance in forestry.

Several of the provinces have established special budgetary provisions described below. Under new legislation, the Quebec government has established a special forestry fund. This fund will be used at the discretion of the Minister of Energy and Natural Resources for the purpose of funding forest management programs and will remain outside the general revenues of the province. The industry will be assessed an amount per unit of wood consumed to help finance this fund. It was not revealed what proportion of total provincial forest management expenditures would be supplied by the fund.

Ontario has within its Forest Management Agreements a means to commit funds on a long-term basis. Each agreement commits the province to fund specific forest management activities for the whole duration of the agreement, which varies from 15 to 20 years and which can be renewed upon satisfactory industry performance. These agreements provide for the funding of forest management costs to escalate in line with inflation. While provincial forestry authorities maintain that the FMAs are long term commitments, it must be remembered that the province enters into an agreement conditional that funds are appropriated annually by the legislature of Ontario.

For large corporations, Alberta deliberately reduced the provincial stumpage charges in exchange for the industry spending its own funds for forest renewal programs.

In order to provide for longer term funding of forestry programs, the B.C. government has committed itself to a five-year planning and budgeting cycle. Both the level and rate of the provincial expenditures are developed for a five year period rather than on an annual basis. Over $146 million are allocated to this fund to be drawn down over a 5-year period. The fate of the fund after the 5-year period has not yet been decided. In addition,

British Columbia allows industry forest management expenditures to be applied to stumpage charges and, thus, the province is providing funding by foregoing some revenues from stumpage.

Significance of Impediments to the Control of Funds

In trying to place this issue of provincial funding control into perspective, it is important to bear in mind the following:

1. Within provincial systems of consolidated revenues, all budget requests must pass through cabinet and must be considered within the context of a province's overall priorities.

2. While all departmental budgets are subject to changes on a year-to-year basis, forestry departments are somewhat disadvantaged by the normal budgeting procedures and timeframes. Forest management is a long term business, requiring long term funding commitments.

3. The question of separate funding arrangements cannot be fully addressed without an analysis of how much money should be "protected" from annual provincial budget reviews.

In other words, would the forestry programs gain more or the same amount of money from the establishment of a special fund than they would from annual allocations? Although this is a moot point, we tend to believe that a forestry ministry would not likely do better in terms of gaining access to long-term funding under a special funding arrangement. Ultimately, there has to be the political will present to spur a province's commitment to more forest management investment.

V.3 Provincial Stumpage Charges

It is has been suggested that stumpage charges and hence stumpage revenues are inadequate to fund forest management investment; if provincial stumpage

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EXHIBIT V-1

Forest Management Expenditures
and Direct Forest Revenues
(fiscal year 1979/80)

	Expenditures on Silviculture	Total Forest Management Expenditures	Direct Forest Revenues	Ratio of Revenues of Total Forest Management Expenditures
		(Thousands dollars)		
Newfoundland	1,435	11,611	1,656	0.14
P.E.I.	50	2,713	20	0.01
Nova Scotia	5,193	26,002	1,590	0.06
New Brunswick	2,667	21,748	7,787	0.35
Quebec	17,256	119,893	40,568	0.34
Ontario	28,776	94,980	49,200	0.51
Manitoba	500	9,900	2,007	0.20
Saskatchewan	2,064	10,677	3,942	0.36
Alberta	6,211	50,264	7,355	0.14
British Columbia	54,611(1)	210,277	565,554	2.69
	118,763	558,065	679,679	1.22

(1) Includes $18.9 million made available to industry through "forestry cost" allowance against stumpage charges.

Source: Canadian Pulp and Paper Association, "Forest Management in Canada Compared to Taxes Generated by the Forest Sector." (July, 1980).

charges were higher the provinces would be in a better position to fund a higher level of forestry work. In the following paragraphs, we explore the extent to which stumpage charges and revenues are inadequate.

Exhibit V-1, opposite, compares forest direct revenues from forestry (stumpage, royalties and rents) with forest management expenditures by province. With exception of British Columbia, direct forest revenues meet only from 6 to 51 percent of total forest management expenditures. Exhibit V-2, overleaf, also contains estimates of average stumpage charges for conifer by province. These estimates are presented by way of illustration. Caution is required in comparing stumpage charges since they reflect different tenure conditions within a province and among provinces.

Quebec also uses the consolidated revenue and expenditure system, however, the province has recently introduced a special forestry fund, which was referred to earlier, and plans to use the fund to earmark financial resources for forestry. It is not clear that this fund was established in lieu of or in addition to funding available from consolidated revenues.

In Ontario, provincial treasury officials indicated that expenditures on forest management are not related to revenues from timber sales. The province uses the consolidated revenue system in which revenues are gathered from all economic sectors into a consolidated account and then allocated irrespective of a sector's specific contribution to the consolidated fund. Therefore, these officials concluded that it is highly unlikely that, say, a doubling or tripling of stumpage fees would result in a commensurate increase in expenditures on forest management programs. The same officials made the observation that if stumpage revenues were higher than their current level, it might help forestry officials to argue the case for more funds for forest management.

Alberta stumpage revenues are a small proportion of the province's annual expenditures on forest management; the province is able to fund the difference between its forest management budget requirements and the amount of money raised through stumpage from general revenues. Manitoba and Saskatchewan do not rely on stumpage revenues at all to finance their forest management programs.

EXHIBIT V-2

STUMPAGE CHARGES BY PROVINCE, 1980

	Average Conifer Stumpage Charges[1] ($ per cu. m.)
Newfoundland	1.04
P.E.I.	0.83
Nova Scotia	1.81
New Brunswick	1.40
Quebec	1.77
Ontario	2.68
Manitoba	1.20
Saskatchewan	0.73
Alberta	0.70
British Columbia	9.32[2] and 13.65[3]

(1) Charges for spruce in Alberta, Ontario, Quebec, Nova Scotia and Newfoundland; for all other provinces, charges are for softwood.
(2) Timber Sale Harvest License
(3) Tree Farm License

Source: Canadian Pulp and Paper Association, unpublished data.

As Exhibit V-2 indicates, stumpage revenues are well in excess of provincial expenditures on forest management. Through the system of stumpage offsets, the province is able to fund a significant proportion of total forest management expenditures and relies heavily on the offset system to fund forestry programs.

However, it is necessary to recognize that some provinces have made an explicit trade-off between higher stumpage charges and forest development goals. Alberta, for example, deliberately set low stumpage rates in exchange for the industry financing forest management from internal company sources. Newfoundland charged no stumpage in order to attract specific pulp and paper companies to establish integrated operations in the province. Such forms of foregone provincial revenue play a part in "financing" forest management expenditures on Crown land, although these "costs" do not appear in the provincial expenditure accounts.

V.4 Fluctuations in Forest Product Markets

Historically, the forest products industry has experienced significant swings in the selling prices of products, volumes and profits. This has resulted in fluctuations in direct provincial revenues derived from the forest sector. In the case of British Columbia, provincial revenues from the forest sector have been, in the past, visibly affected by the business cycle in the forest sector. Officials in the provincial government indicated that this source of revenue instability was an important reason for establishing a 5-year budgetary process, supplemented by revenues from the Forest and Range Resource Fund. The fund is designed to provide a steady flow of funds regardless of the particular conditions in the forest products market. In this way, B.C. officials anticipate that this new budget process will break the link between the fortunes of the forest products industry and the ability of the government to fund forest management programs over the duration of the business cycle.

Officials from the other provinces stated that they did not consider changes in revenues from the forest resource sector to have a bearing on expenditure

decisions in forest management. These provinces relied upon consolidated general revenues and tenure agreements to fund programs.

V.5 Displacement of Provincial Funds by Federal Funds

The federal government under the DREE Subsidiary Agreements provide direct funding for forestry programs in Newfoundland, Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan, and British Columbia. Federal authorities have expressed interest in the way these funds influence an individual province's decision to allocate its own financial resources to forestry programs.

Some provinces, such as Ontario and British Columbia make decisions regarding forest management expenditures as if DREE grants were not forthcoming. Their province would prefer not to rely directly upon DREE grants generally or specifically to meet provincial revenue goals. Whereas, federal funding is almost the only source of government forestry funding in such provinces as Nova Scotia, New Brunswick and Newfoundland.

V.6 Discontinuity of Matching Federal Funds

Provincial officials pointed to a history of instability in federal funding. For example, B.C. officials pointed to federal funding of R & D programs in the past which were cancelled or given reduced funding in the wake of overall federal budgetary cutbacks.

Provincial authorities are also critical of the failure of the federal government to coordinate forest management programs with the provinces. British Columbia officials noted that federal funding sometimes comes in spurts, creating problems for the B.C. Ministry of Forests to absorb and incorporate these funds into its own program development.

V.7 Incompatibility of Federal Funding with Provincial Goals

Observations were made that federal/provincial cost sharing arrangements are not compatible with provincial funding requirements in two basic respects.

First, federal/provincial funding arrangements are not long term, which creates a feeling of uncertainty and makes planning difficult. Second, the objective of federal funding does not always coincide with funding provincial goals; for example, it was pointed out that decisions to fund programs under the DREE Agreement are motivated more by short-term employment considerations than by forest management considerations.

V.8 Relative Importance of Provincial Impediments

Having reviewed four major impediments which are perceived to influence forest management performance at the provincial level, we conclude this section by commenting on the relative significance of each impediment.

Lack of Control over Budget Allocations

The most important impediment facing the provinces concerns provincial forestry authorities lack of control over the determination of total budgets allocated to forest management. Admittedly, all government departments, whether provincial or federal, are obliged to work through the consolidated revenues and expenditures system. (The noteable exception is the use of the stumpage offsets in British Columbia; offsets operate outside the consolidated revenue system.)

Equally important is the fact that provincial forestry budgets are established on a short-term basis which frustrates the planning process and hinders implementation of specific long term programs.

In this respect, forestry authorities will have to make a more convincing case to cabinet for a change in provincial priorities in favour of increased funding and longer term commitment for forest management. A more determined effort on the part of provincial forestry officials in terms of making the economic case for better investment in forest management is required. Also, the particular and special long term commitments toward forest management programs must be more clearly developed and effectively communicated. We believe that there is a federal role to be played in assisting provincial

authorities in making this case. We will elaborate on this point later in the report.

Stumpage Charges

With the exception of British Columbia, stumpage charges does not appear to be a significant factor in the province's decision to fund forestry programs. Funding is derived from consolidated revenues and decisions to spend money on forestry are not related to revenues derived from the forest products sector. However, we note that Ontario and Quebec have relatively low rates of stumpage charges, and if these provinces increase their stumpage charges, there is the possibility of influencing indirectly decisions to allocate greater funds to forestry. The provinces have the legal powers to increase stumpage charges and logging taxes on Crown land, and they should be encouraged to do so as long as it doesn't jeopardize the long-term competitive position of the industry.

Fluctuations in Revenues from Forest Products Industry

With the advent of the special funding arrangements in British Columbia and other provinces fluctuations in the markets for forest products and, hence, fluctuations in revenue derived from the forest sector do not play a part in decisions affecting investment in forest management.

Displacement of Provincial Funds

Regarding the influence of the federal spending on provincial budgetary decisions, we note that in Ontario and British Columbia, federal funds do not tend to displace provincial funds for forestry programs and therefore cannot be considered as a factor contributing to a reduced level of provincial investment in forest management. In the case of the Atlantic provinces, federal funding is far and away the largest source of funding for forestry programs, and these provinces would unlikely provide the same level of investment in forest management without this federal assistance.

Discontinuity and Incompatability of Federal Funds with Provincial Goals

The discontinuity of federal funding programs in specific areas is an important impediment. Provincial officials feel that they cannot always develop programs with the central government knowing that the other partner may alter its own funding priorities to the detriment of provincial forestry goals.

However, it is necessary to recognize that the federal government established the subsidiary agreements for forestry in 1974 for a 10-year period. By most standards, a 10-year commitment by any government can be considered as "long-term"; after all, this type of commitment does extend beyond the term of the government of the day.

Regarding the issue of incompatibility of federal funding to provincial goals, federal officials have argued that employment is only one of many objectives of the DREE forestry agreements. The Federal government is concerned with assisting the provinces in meeting their forestry targets and believes that, in doing so, regional employment objectives can also be met.

VI - IMPEDIMENTS LIMITING PRIVATE FUNDING OF FOREST MANAGEMENT

In this section, we examine several factors which have been suggested as restricting the level of investment in forestry by the private sector. These include:

1. Lack of equity in timber on Crown land.
2. Provincial timber pricing policies.
3. Perception of the degree of scarcity of supply.
4. Long term outlook for forest products.
5. The nature of corporate investment philosophy.
6. The nature of the roundwood market facing small woodlot owners.
7. Provincial property taxes and forestry incentive programs.
8. Federal income tax provisions.

VI.1 Equity in Timber on Crown Land

The vast majority of productive forest land in Canada is owned by the provinces which allow the specific companies to harvest timber under a variety of licencing, leasehold and other contractual arrangements. These arrangements have usually been granted in the past for relatively long terms of 20 years or more. Also, there are a wide variety of shorter term arrangements, which principally apply to the small independent segments of the industry.

Given the temporary nature of rights to Crown timber, the position has been put forth that a harvesting company would not likely engage its own resources in reforestation because there is no assurance that it will be able to reap the harvest at the time of maturity which usually occurs after the agreement has expired.

Industry Views

We found that there were divergent views within the forest products industry regarding the significance of private ownership on decisions to invest in reforestation. Some companies contend that leases and licenses on Crown Land do not provide secure access to wood on a sustained basis. They argue that, since a company does not own the timber on Crown Land, there is no guarantee that the company will be able to harvest the trees it plants. In their view, security of supply is best achieved under a system of private land ownership. Furthermore, they argue that, under a freehold land system, even if the company were to sell its land at a time when the timber had not yet reached maturity, the company would likely be able to recapture its earlier investment in reforestation.

Moreover, those firms which derive wood from Crown land under license or lease stated that they are reluctant to invest in an asset that is owned by someone else because the investment is not transferrable in the marketplace. Even if the industry accepted the guarantee that eventually they will have access to the benefits derived from their investment, the company could not enjoy these benefits by selling its investment at some future date. Leases and cutting rights are, in principle, not transferrable. On the other hand, if it owned the timber, it could probably get a fair value for that asset at the time the company decided to sell out. Thus, it is not so much the lack of trust by company management in Government guarantees that keeps the company from investing in woodlands. Rather, the companies would prefer to have the option open to them of selling their forest investment at any time during the rotation cycle at its fair market value.

Other companies in the industry stated that they do not accept the above argument. These companies contend that the industry has always had secure

access to wood supplies on Crown Land. For example, it was observed that the industry has invested substantially in mills in the province of Quebec and Ontario for the past 50 years without owning the land or its timber. Also, the point was made that no mill has ever been forced to close due to a government decision not to renew a cutting license. In other words, once a company makes the capital commitment to a wood conversion plant, government will honour that commitment with guaranteed wood supplies.

This debate about the significance of ownership will undoubtedly continue. Meanwhile, the provinces, recognizing the necessity of investments in forestry programs, are taking the lead in funding forestry programs on Crown land. To provide for the industry participation in these programs, a number of agreements/systems are being developed and negotiated that allow either cost recovery or direct payment for the satisfactory performance of agreed work programs. Since these agreements are long-term (20 years), with renewal options for satisfactory performance, they appear at this early stage, to address the private sector requirement for contractual security of supply. The present arrangements do not alter the equity in land or wood; this still remains with the Crown. The new arrangements are being developed or existing arrangements are being improved upon in a number of provinces.

Recent Developments in Land Tenure Agreements

Ontario is implementing a system of Forest Management Agreements (FMA) with the major integrated companies. The FMA's are an example of an "area-based" tenure. These agreements are an attempt by the province to provide greater security of supply to the industry in exchange for the industry conducting on behalf of the province basic forest management activities. The province is prepared to reimburse the signatories to an FMA for prescribed forest management costs according to the terms of agreement drawn up between the company and the Ministry of Natural Resources. In addition to these "base level" expenditures, the major incentive to intensify forest management investment is the province's commitment to the private sector of a reduction in stumpage charges to 10% of the standard rate on timber grown at company expense, or to an increase in the annual allowable cut, resulting from extra

forest management efforts. Upon the successful performance of forest management activities, the firm can anticipate a renewal of the Agreement for an additional term of 5 years. Thus maintaining the original 20 year term.

In contrast, the Quebec government has moved in a different direction than Ontario with respect to Crown land. In 1974, Quebec began to revoke timber limits and to establish volume-based agreements which would guarantee supplies to lumber companies and to some pulp and paper mills. In turn, the province has assumed full responsibility for funding and implementing silvicultural treatments and reforestation. Where it has neither manpower resources or detailed local knowledge, it prefers to contract to the industry to conduct the specific forest management programs.

British Columbia is revising agreements with industry which feature both area-based licenses (Tree Farm Licenses) and volume-based licenses (Forest Licenses). Under both forms of license, the province requires that forest management practices be instituted and absorbs the cost against stumpage fees. Section 88 of the Forest Act provides for a system of cost reimbursements for specific forest management practices. In addition, Section 52 allows for an increase in the annual allowable cut (AAC) in exchange for intensive forestry activities. Industry officials have observed that these two basic provisions, stumpage offset and potential increases in the AAC, are positive inducements; both are required as neither is sufficient on its own.

Industry Concerns

We asked industry representatives whether these forms of forest management agreements were adequate to encourage industry participation in forest renewal. Industry officials were generally supportive of the new arrangements but raised the following three basic shortcomings under the current systems.

First, under an area based agreement, such as the FMA's in Ontario, Alberta and Manitoba, the withdrawal of forest land for non-timber purposes is of concern to the industry. Although there are provisions for compensation,

industry would prefer not to have land which it reforested potentially exposed to future withdrawal. Where the opportunities for multiple use of land are the greatest, government decisions to expand the agricultural base or to withdraw land for environmental control and recreation have been cited as a negative influence on decisions to invest in reforestation. Moreover, withdrawals have an adverse impact on an area's AAC and hence, a company's access to supply.

Second, some incentives for intensive forestry are inadequate. Ontario provides a reduction in stumpage charges on timber grown at industry expense, which amounts to a very small reduction in overall wood harvesting costs due to the relatively low stumpage rates currently in existence. In British Columbia, several industry representatives indicated that the province was acting too conservatively in providing increases in the AAC, thereby blunting some of the industry's enthusiasm for this incentive.

Third, volume based agreements, such as those in effect in Quebec and in parts of British Columbia, have also been cited as a source of insecurity. The large integrated companies are not prepared to invest in forest mangement because they are concerned about:

1. The government's ability to guarantee wood supply in the area over the long run;

2. The quality of wood available, as the user was not directly involved in reforestation; and

3. The equitable allocation of wood over the long run.

4. In the case of British Columbia, the policy of permitting up to 25 percent of the land to be set aside for small businesses.

By comparison, small independent wood products manufacturers favour volume agreements because they generally believe it provides them with access to supply which they may not normally be able to negotiate with the integrated

companies. Moreover, smaller independents may not have the financial means to retain forestry consultants to assist in managing forests under area-based agreements.

VI.2 Provincial Timber Pricing Policies

In exchange for the right to harvest timber on Crown land, provinces usually charge stumpage which varies within a particular province and with tenure agreements, depending upon the site location, quality of wood and species grown. The stumpage systems used in Canada vary widely from province to province; most provinces arbitrarily determine stumpage (eg. Ontario), others take into consideration market conditions (eg. British Columbia).

Although the Crown does not levy or establish charges for the stumpage value of wood cut on private land, its own practices can indirectly influence stumpage charges in the private sector. In Ontario and Quebec, for example, the Crown owns over 90% of the land and is the largest supplier of wood. Private wood lot owners who have to compete with wood from Crown land in their area are constrained by the stumpage charges levied by the Crown, and in such circumstances, the Crown has a significant influence on the price obtained for wood from private land. Furthermore, several of the large integrated companies have access to Crown land as well as to private land; in many cases, their Crown land rights comprise much more than half of their total wood supply. Hence, the stumpage charged by the Crown in effect, sets the value the private landowner can place on his own wood.

In other circumstances, where Crown land does not contribute the largest part of potential supply, Crown stumpage can also influence private stumpage charges. The wood supply industry in Nova Scotia and New Brunswick is very fragmented, such that the Crown, although owning less than 50% of total available supply, acts as the predominant supplier whose prices set the trend for the entire industry. The degree to which Crown stumpage policy can influence private stumpage varies considerably depending on location, quality of wood and end use.

In the following paragraphs we report on how industry representatives view the influence of provincial stumpage policies on their own forest management decisions.

British Columbia

In British Columbia, where the Crown owns over 90% of the wood supply, many industry officials remarked that raising stumpage charge on Crown lands would adversely affect forest management. Several company representatives made the point that any increase in current stumpage fees would only lead to a "high-grading" of the forest, in which only the best wood would be harvested, and would not necessarily contribute to better forest management. Other industry representatives expressed concern that higher stumpage charges would jeopardize the industry's competitive position and would negatively influence corporate decisions to invest in forest management.

Ontario and Quebec

In Ontario and Quebec several industry representatives noted that current stumpage charges are relatively low, even by historical standards. However, they also stressed that any substantial increase in stumpage charges (in the order of 50% or more) would hurt the industry's competitive position. Industry officials contended that they already face relatively high costs for harvesting and transporting wood, and for operating relatively old and inefficient mills. Some voiced concern that any future increases in wood costs would jeopardize the industry's competitive position in the future.

Naturally, any industry will resist any increase in the price of its raw materials, and the forest products industry is no different than other industries in this respect. The statement that higher stumpage charges would lead to "high-grading" is difficult to substantiate, and not everyone in the industry would agree that this would result. As for the issue of jeopardizing the industry's competitive position, it appears that the provinces have accepted that argument and are reluctant to increase stumpage charges significantly, especially in Ontario (which provides for indexation

only) and Quebec. The question remains, however, how far stumpage charges can increase before the industry's competitive position truly suffers. This is a difficult and contentious issue which extends beyond the scope of this study. Moreover, even if stumpage charges were increased, there is no guarantee that the additional revenues will find their way into forestry.

As we indicated earlier, Crown stumpage fees can influence the market value of wood produced on private land. To the extent that Crown stumpage is relatively low, the value the owner of private land places on his wood is corresponding low and hence his incentive to regenerate forest land is adversely affected. This is especially relevant to recent policy pronouncements in New Brunswick.

New Brunswick

In the past, it was contended that stumpage rates available to woodlot owners was inadequate to encourage the growing of more timber. Therefore, New Brunswick is moving towards a system of using the open market to set stumpage charges on Crown land. Several industry officials indicated that this would result in the higher stumpage fees, which would make wood production and forest management much more attractive to both large companies and the small wood lot owners. In principle, higher stumpage charges would encourage greater production, improve revenues and, this would possibly improve the return on investment in forest management.

While the Province has developed a concept in which stumpage levees are to be reflective of market conditions, the authorities are still working on an implementation plan. Until such a plan is actually developed and put into place, it is not possible to comment on what impact this new policy would have on forest management, especially for the small woodlot owners.

VI.3 Scarcity as a Motive for Investing in Forest Management

The desire and willingness to increase investment in forestry takes on an added force when a company faces the prospect of wood shortage. As we discuss in the following paragraphs, one's perception of wood scarcity

depends on many considerations, including, investment time horizons, future price assumptions, the type of firm and geographic location. While it is widely agreed that Canada's timber base is declining, there is no clear consensus regarding the severity of this decline and hence, the degree of urgency involved in stepping up efforts to renew forest lands. As a result, investment efforts in forest renewal vary across the country.

History

During the first half of the century, there were substantial unallocated timber reserves and the forest products industry was encouraged to expand into new areas rather than conduct a program of reforestation in areas already cut over. The provincial governments provided the basic infrastructure, such as access roads, and charged relatively low stumpage or royalty fees to encourage the development of the industry. No clear signal was given, or was available to industry, either in the form of limitations to timber supply or increases in stumpage fees which would have indicated growing scarcity or the need to reforest.

During the same period, the large integrated pulp and paper producers enjoyed extensive timber rights on Crown land under long-term leases. Companies often had sufficient supply to meet their expansion plans. In many locations, over-mature timber was being harvested, thereby reinforcing the view that reforestation was not required at the time. In addition, it was believed that natural regeneration was taking place at rates sufficient to replenish the resource.

Current Trends

Increasingly, industry is recognizing that potential shortages may arise if improved forest management does not occur. However, the degree of concern and, hence, the degree of effort to improve forestry are not uniformly shared across the country. This variation in the perception of raw material scarcity explains, in part, different attitudes and responses to the need for more forestry expenditures.

In New Brunswick, Nova Scotia and Newfoundland, there is a widespread concern that there will be insufficient wood supply beyond the next twenty to thirty years to satisfy the current level of production. The spruce budworm has devastated significant amounts of timberland, creating urgency on the part of both industry and government regarding the need to control the budworm and to launch major efforts in reforestation.

In Ontario and Quebec, there are differences regarding the perception of scarcity. Within each province, it was stressed that there are specific regions and industry segments which face supply shortages over the longer run; in other regions, it was contended that there is adequate and, in some cases, abundant supplies of wood.

The perception of scarcity also depends on the type of firm in the industry. Several of the large integrated pulp and paper companies did not voice concern with long run supply problems; these organizations usually have access to adequate supplies under long term leases on Crown land or own their forests. Several of the smaller independent operators (usually saw mills), who are currently experiencing shortages of specific types of sawlogs, felt less secure regarding access to supply. They often have to negotiate with third parties for wood, and because of their lack of market power, they are in a disadvantaged position.

In British Columbia, most segments of the industry expressed concern with the emerging wood supply shortages in two important regions of the province. In the coastal and southern interior regions, several industry representatives indicated that wood scarcity accompanied by rising wood prices was not too far away.

VI.4 Long Term Outlook for Forest Products

The long term outlook for profits and growth affects the corporation's decisions to invest in renewal programs. Those large integrated corporations we interviewed in Ontario and Quebec expressed concern over the industry's long run competitive position. These officials cited such factors as the

relatively high cost of wood and the inefficiency of mills compared to the competition in the United States, Europe and Brazil. Moreover, it was pointed out that rates of return in integrated operations were much higher in United States than in Canada, providing an opportunity for the industry to consider the development of new mills south of the border. Finally, conglomerates having subsidiaries in the forest products industry systematically assess the alternatives for investing in non-forest related industries. It was suggested that should more attractive investment opportunities arise elsewhere in the economy, reforestation would receive a lower priority within the corporation's overall investment objectives.

By comparison, the integrated companies in British Columbia expressed greater optimism regarding the industry's long term future in that province. In their view, it is in the industry's best interest to increase yields in order to participate fully in the growth of new markets in the longer term.

VI.5 Corporate Investment Philosophy

In the Canadian environment, trees, as a rule, take anywhere from 30 to 100 years or more to mature for conventional products. The time required to reach maturity can vary considerably throughout the country, depending upon species grown, climate and soil conditions. The extent to which the long growing period influences decisions to invest in forest management relates, in part, to how the corporation views the cost of reforestation.

Some argue that the cost of forest management should be considered as part of the cost of harvesting; that is, harvesting activities should include provisions for regeneration of the forest as part of normal operating costs. Others contended that the cost of forest renewal expenditures should be treated as an investment and must be considered within the context of a lengthy payback period and possible risk of loss due to fire and disease.

The way a company chooses to approach expenditures on forestry is largely a matter of individual corporate philosophy. The development of this

philosophy is conditioned by the confidence a company has in its long term future, the growth of its product markets and its ability to compete successfully. Company A, which is unsure of its growth prospects in the long run, may not be willing to incur the additional operating costs associated with regeneration work while having to wait many years before those additional costs actually result in greater production, sales and profits. Company B may not view the expenditures on forestry with the same degree of risk as Company A and may be prepared to incur the additional costs initially in the expectation of future profits.

In addition, the choice of expensing or capitalizing forestry expenditures can often be a matter of historical development within a corporation, and changes in attitudes either way may take place slowly or with changeovers in management or ownership or changes in the corporate income tax provisions.

Several of the large integrated companies in Ontario and Quebec said that they consider forest management as an investment. Given the lengthy payback period , forest management does not readily conform to the normal planning time horizon. The normal business planning cycle runs between five and ten years. Market demand and supply data as well as technological information are fairly adequate for a corporation to make decisions within that timeframe. However, extending the planning horizon beyond ten years involves greater risk-taking, especially with respect to changes in technology and the composition of demand for final product. An investment with a forty year payback period features uncertainty with regard to price of final products and market demand, and rates of return. On top of this, an investor must consider risks involved in losing some or all of the initial investment in silviculture due to, say, fire or disease. Consequently, an investment with a 60-year payback cannot be considered within the normal business planning cycle by such companies. The implication of the previous point is that, unless the growing cycle is reduced significantly, the economic returns from replanting in Ontario and Quebec are inadequate to justify the risks in investment.

In contrast to Eastern and Central Canada, several of the large integrated firms in British Columbia have adopted the philosophy that forest management

is an operating cost. These firms tend to "expense" forest management programs rather than "capitalize" them. Moreover, these programs are developed and implemented in conjunction with harvesting activities which are normally treated as operating expenses. For some B.C. firms, harvesting and reforestating activities are combined under one operating division, thereby providing an opportunity to conduct forest management along with harvesting and improve overall efficiency.

Woodlands as Cost Centres

The integrated forest products companies generally view the woodlands operations as cost centres for the company. In addition to the direct cost of logging, the woodlands operations incur costs associated with road building and maintenance, fire protection, and insect spraying. Every effort is made to reduce woodlands costs in order to maximize profit or at least recover costs in the manufacturing operations. Therefore, more intensive forest management will add to costs which have the potential of reducing profits on downstream operations.

However, this view is in contrast to the corporate philosophy of some companies in British Columbia. Some company representatives remarked they view forest renewal investments as a separate activity within the entire integrated operation. It was learned that the decision to regenerate land is based on the net benefits arising out of an increase in the annual allowable cut and/or yield. Moreover, industry officials appeared not to place as high an emphasis as their counterpart in Ontario and Quebec on the need to contain the costs of forest management in order to provide relatively inexpensive wood to their mills. Primarily, these officials stressed that their company tended to look to the woodlands as a source of long term supply and therefore did not insist that woodlands operations conform to short term profit maximizing goals.

Investment Criteria Used for Investment in Private Land

The "acid test" concerning the importance of private ownership of land and timber relates to investment behaviour in forest lands held in private hands.

As we noted earlier, there are substantial amounts of land held privately in P.E.I., Nova Scotia, New Brunswick, Southern Ontario, the lower St. Lawrence and Vancouver Island. In this section, we consider the questions of whether private ownership is a sufficient condition to guarantee enhanced forest management by examining the role financial rates of return play in corporate decision-making in forestry.

Some of the large integrated companies indicated that they employ project evaluation techniques based upon discounted cash flow analyses in determining a rate of return on investment in forest management in private land. The calculation of a rate of return on investment in forest management involves a number of technical considerations. Costs are related to the quality of the site and the extent of treatment delivered. Prices are related to the nature of the species regenerated. Since costs and prices vary widely across the country, and since companies use different assumptions to calculate a rate of return on investment (such as projected inflation rates), it is not appropriate to make a direct comparison of return on investment among companies or regions in the country. However, for illustrative purposes, we report on how four companies employed a rate of return analysis on reforestation projects within the context of their own supply situation.

Case 1. A large integrated company with significant freehold land in Quebec and Ontario does basic silviculture but no intensive forest management. The corporation estimates that it would not earn an acceptable rate of return before taxes on a program of reforestation. The company indicated that it could not foresee undertaking a major reforestation program on the basis of this relatively low rate of return. The company indicated that the price of wood on its land would have to increase and/or wood supply would have to tighten in their region in order to make reforestation financially attractive.

Case 2. A major integrated company in the Maritimes has developed a program of reforestation to produce seedlings for planting on its Crown and freehold woodlands. Because approximately 40% of the forest area

that is cut each year fails to regenerate to desirable levels, the company is concerned that it will not be able to obtain the annual growth of wood fibre to supply its current and projected requirements beyond the next twenty years. Although a nominal rate of return of 6% on this investment is not considered attractive, concern with long run supply overruled the implications of the rate of return analysis.

Case 3. A privately-held company with substantial private lands in the Maritimes has concluded that on the basis of its calculation of a rate of return, it would not carry out a regeneration program. However, the company is concerned with its supply position twenty years from now and, therefore, has decided to reforest despite the unattractive return on this investment.

Case 4. A major forest products manufacturer owns substantial land in British Columbia which is currently under forest management. The Company investigated several alternatives to increasing its wood supply and concluded that the cheapest fibre would come from increasing the yield on its existing land base. Moreover, the firm contends that the use of intensive forest management would reduce the rotation cycle by half. Depending on site location and the nature of the silvicultural treatment, the company estimates a nominal rate of return of 10% to 12%; on this basis, it is prepared to continue its regeneration programs.

The above examples demonstrate the reasons why some companies use their own funds for reforestation. Their motives are that:

- they have found a way to reduce the growing cycle which has resulted in an acceptable rate of return (Case 4);

- they have individual or family held ownership of land and regard it as a means to preserve their family wealth, largely against inflation (Case 3);

- they are prepared to be in the wood conversion business for the very long haul and consider the investment as a strategic move to maintain the company's market position in the future (Case 2).

VI.6 Nature of the Market for Stumpage and Round Wood Produced by Small Wood Lots

This section discusses the factors that affect decisions to invest in forest management by the small private woodlot owners in Nova Scotia, P.E.I., New Brunswick, Ontario and Quebec; (small woodlots are not significant in British Columbia). Traditionally, the small wood lot owner has harvested the wood in order to obtain cash income to augment income from other sources. In most instances, it has not been regarded as a prime income source. Replanting and managment practices are almost non-existent since revenue to individual owners does not support such activites.

The migration of people from marginal farm land to seek employment in urban areas, changes in ownership to develop recreation sites and investment needs of the affluent have produced a different mix in the objectives of small woodlot owners.

The provinces have developed a number of programs to encourage reforestation and good management practices. In each province, concern was expressed as to whether the incentive programs really achieved all of the original goals which generally included some maintenance or improvement of rural life and local economic conditions as well as forest management. It was generally believed that owners with recreational or investment objectives took the most advantage of available forestry programs.

The provinces of New Brunswick and Nova Scotia have a large percentage of their potential wood supply in the hands of small private woodlot owners. Both provinces are developing new programs to endeavour to bring a larger acreage of private woodlots into future wood production through early participation in forestry programs. Although the approach being taken in each province is different, (New Brunswick is developing a system of

cooperatives; Nova Scotia is moving towards coordination of planting and management activities to individual owners), the problems to overcome are very similar:

- fragmentation and dispersion of woodlots make efficient forestry practices and management difficult;
- size of return/income to each individual owner often is insufficient to produce an economic reason for more participation in fully paid forestry programs;
- difficulties of getting scattered supplies to the users and of negotiating satisfactory and firm prices for wood supply that could be sporadic and of uneven quality;
- problems of getting agreements from larger integrated groups.

Nova Scotia

There has been a percentage reduction in supply originating from private wood lots in the province during the past twenty years. In the 1960's, private woodlots accounted for 50% of the fibre for the industry, now they provide only 30%. The decline in private wood lot supply has been compensated by an increase in supplies from Crown lands.

Representatives from the private wood lot associations indicated the following factors which hinder the ability of the small woodlot owner to contribute their province's supply needs:

- many small woodlot owners are located in the zones excluded from spraying against the Spruce Budworm;
- some wood lot operators do not foresee a future in timber production and have expressed interest in selling their land and investing their returns elsewhere in the economy;

- softwood production from mixed stands is being hindered because of the problem of marketing excess supplies of hardwood.

New Brunswick

According to provincial officials the evolution of timber rights in New Brunswick had resulted in the misallocation of wood supply and tenures to the various users. Some companies had more than enough wood available from their Crown timber rights, which meant that they did not have to utilize their own freehold lands. Others had neither sufficient Crown nor freehold timber nor had rights to an appropriate wood supply for their mills. The situation resulted in some companies having an unfair advantage over others. In addition, the province was being pressured by small companies, especially sawmills, to reallocate Crown lands in order that these companies have an equal access to Crown timber.

In response to this situation, the province has proposed new legislation which comes into effect in 1982. The integrated companies have to draw their wood supply first from small private wood lots, second, from their own lands; and third, from Crown lands. (Although it is presently unclear how this allocation system will operate.*) By relegating Crown lands to the role of a residual supplier, it is hoped that there will be a greater opportunity for the private wood lot owners to supply the major lumber and pulp and paper operators in the province. In addition, under the new Act, stumpage charges will be more reflective of fair market value rather than related to the royalty system established in the past. Industry and government representatives expressed optimism that higher stumpage charges will improve the financial returns to the small woodlots and therefore provide an incentive to invest in forest renewal.

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* A task force is currently studying the procedures both for establishing price and determining supply allocations.

Against this background of change, industry representatives and provincial authorities cited three basic challenges which have to be met.

- with woodlot owners numbering more than 25,000, this segment of the industry faces major organizational challenges; although marketing boards are being formed in order to negotiate effectively with the lumber and pulp and paper mills, the process of consolidating these individual owners is slow;

- as yet, no mechanism exists for negotiations between the marketing boards and the large integrated companies; there are no established procedures and rules which will govern the way marketing boards will operate vis-a-vis the industry and what role, if any, government will play;

- no mechanism has been established which will ensure that the integrated companies draw wood first from the private woodlots and then, from their own freehold supply; the needed implementation procedures are the subject of a special Task Force currently conducting its investigation;

- there is a need to upgrade significantly the knowledge regarding forest management among woodlot owners.

P.E.I.

In the past, the P.E.I. forests were severely high-graded and left largely unattended. Since there is no significant harvesting today, there is limited interest on the parts of the private landowners to replant; moreover, a large part of the wood products consumed on the Island is imported. Finally, the small wood lot operators have no established marketing system.

Ontario and Quebec

Private small woodlot owners in Ontario and Quebec own less than 5% of the total land under productive forests. Nevertheless, they have a role in contributing to wood supply in the medium to long term, since they are, in many cases, located in areas close to conversion plants and end-use markets. According to provincial officials, their participation in the supply system is well below their potential for several reasons.

- o although not unique to Ontario and Quebec, many woodlot owners do not rely on their timber revenues as a main source of income; for example, farmers sell their wood to meet specific income targets to supplement income from agriculture; urban dwellers owning forest land usually prefer to use land for recreational purposes and/or to preserve it for future generations;

- o in both provinces, the Crown is the largest supplier of wood to the industry. Accordingly, prices on private land are set in relation to Crown stumpage rates. The relatively low Crown rates act as a deterrent to small wood lots contributing to production;

- o like other provinces (Nova Scotia and New Brunswick), the government provide assistance programs, such as technological advice, financial assistance, and the provision of seedlings; however, many wood lot owners are not aware of these programs or how to gain access to them.

The provincial authorities appear to have a dual objective in trying to support small wood lot operators: (1) the preservation of rural life, mainntain small communities and support rural industries; and (2) the expansion of wood supply. These objectives are complimentary since the development of a wood lot sector would contribute to the strengthening of the rural economy and improving rural life styles.

VI.7 Property Taxation and Provincial Forestry Incentive Programs

There is a variety of property taxation measures in each province which may affect a woodlot owner's ability to finance forest management activities. In general, these taxes are relatively nominal and therefore do not contribute significantly to the total cost of woodlands operations. Nonetheless, property tax reductions for woodlot owners who qualify in Ontario and Nova Scotia, which are limited to silviculture work by the owner, have some positive impact upon the small woodlands operators' decisions to undertake forest management.

Aside from property tax incentive schemes the provinces operate various forestry incentive programs. These programs can vary from provision of seedlings to the provision of technical advice on woodlands operations and management. Ontario, for example, provides seedlings to private wood lot operators at relatively nominal costs; Quebec, for example, provides some technical services and low interest rate loans to encourage the owners of small woodlots to undertake better forest management. In many cases, these incentive programs are not fully utilized by the private sector because of: (1) the lack of interest in reforestation, (2) the lack of knowledge that these programs exist, and (3) the lack of understanding of how best to utilize these forestry services.

VI.8 Adequacy and Compatability of Federal Income Tax Provisions

An important issue concerns the extent to which the federal income tax provisions are adequate and suitable as incentives to encourage good forest management investment by the private sector. Under the existing federal income tax system, expenditures on forest management are fully deductible from corporate income.

As a result, the larger corporations with sufficient taxable income are able to deduct expenses on forestry. These corporations contended that the current income tax system was not an impediment, since it treated forestry expenditures in a similar fashion to other forms of operating expenses.

However, for the smaller woodlot operator, who usually has little or no taxable income, the current income tax system does not offer any incentives. One suggestion is that Canada adopt a capital gains tax system geared to the small woodlot operator, similar to the program in the United States. The U.S. program applies a capital gains tax, which is lower than income tax, on the sale of wood from small woodlots. Further research into this policy option for Canada is needed. Other forms of tax incentives (eg. investment tax credit) have already been examined in the CCREM study on funding mechanisms referred to earlier.

VI.9 Relative Importance of Impediments in Private Sector Performance

Having analyzed the responses of industry to a variety of different perceived impediments, we turn to a discussion of the relative importance of each impediment in private sector decision-making.

1. Scarcity Not Perceived

The strongest motive for forest management investments is the knowledge that a company's wood supply will not be adequate to sustain and/or increase production for as long as the company plans to be in business. Presented with the facts that shortages are on the planning horizon, the company will marshall the financial and technical resources to increase its timber supply. This is very evident in the Maritimes today. However, if a company does condsider its timber supply to be adequate within the period of its own planning horizon, then it is not likely that management will undertake major investments in forestry. Moreover, to the extent that shortages are not perceived by industry uniformly across the country, private sector investment on the whole will be below the expectations of federal and provincial authorities.

2. Excessive Risks and Lengthy Pay Back Periods

Even if a company identifies the potential for wood scarcity in its area of operation, its decision to invest in forestry on its own lands will depend on the way it perceives the long term risks involved. With payback periods approaching 60 years or more, plus the risks due to loss or damage from natural causes, it is understandable why a company would be reluctant to commit substantial funds to forestry.

3. Lack of Equity in Timber on Crown Land

The fact that industry does not have an equity interest in the timber on the stump on Crown land has been cited as a major deterrent to private investment in reforestation. While this concern continues to exist in various quarters of the industry, we believe that this issue is receding and will likely recede further in light of the provinces decision to assume prime responsibility for funding forestry work. With the provinces reimbursing the industry for basic forest management expenses conducted on behalf of the Crown, the industry is willingly participating, in increasing numbers, in forest management.

Furthermore, the industry is being encouraged to undertake additional forest management investment through the incentives of increases in the annual allowable cut and reductions in stumpage charges. The remaining issue concerns whether these incentives are adequate, on a provice-by-province basis, to encourage industry's involvement.

Thus, given that the provinces are: (1) funding expenditures in basic forest management and (2) are providing financial incentives or increases in wood harvest in exchange for industry spending on intensive forest mangement, reduces the significance of the issue

of ownership as a prerequisite for investment by the private sector.

4. Provincial Timber Pricing Policies

Timber pricing policies on Crown land are a factor in the setting of prices for wood from private wood lots. As long as the provinces are either in the position of owning the vast majority of land or of being the largest single wood source in a particular region, Crown timber prices will influence prices charged for private wood. If Crown prices are set without adequate recognition of changes in demand and supply conditions, the marketplace will not receive the appropriate signal regarding long term supply constraints.

5. Nature of Market for Small Woodlot Production

Small woodlot owners, especially in the Maritimes, face many difficulties in making a contribution to the region's longer term supply base. As a fragmented group of thousands of individual owners, they require assistance in organizing production and marketing and in upgrading their knowledge of forest management practices.

6. Federal Income Tax Provisions

The federal income tax provisions do not appear to be an impediment to investments in forestry, since expenditures for intensive forest management are considered as expenses to create revenues and are deductible in the year they are incurred. Additional tax incentives, eg. tax credits, encourage some additional investments, but we suggest, that additional incentives may not result in an increased expenditure on forestry. Specifically, the income tax incentives would not help those who require the most assistance, i.e. small woodlots, since many of these operations earn little or

no taxable income. As for some of the larger wood producers, investments decisions are often taken irrespective of tax incentives; rather, these decisions are more influenced by concern over long term supply.

VII - OTHER IMPEDIMENTS

In the course of our interviews, respondents suggested a number of other impediments in addition to those specified in the Terms of Reference. In this section, we report on those additional impediments which were frequently cited in common by officials of government and industry as having a significant impact upon forest management investment in Canada.

VII.1 Lack of Public Awareness

The observation was made repeatedly that the general public is inadquately informed about the need to increase forest management investment. Some segments of the general public believe that Canada's forest resources are virtually inexhaustible, and therefore, they do not perceive potential shortages that may possibly affect the economic well-being of the country. Others in the population, believe that industry and government are reforesting the land at a rate equal to the rate of timber supply depletion.

Public attitudes play a major role in influencing governments to allocate funds to different sectors. Thus, to the extent the public is not adquately informed about the need to increase forest management investment, political authorities at the provincial levels are not being pressured to shift more government resources in the direction of forestry programs. One of the best guarantees of improved forest management is a well informed and articulate public which can bring the appropriate pressures to bear on provincial governments. Some have suggested that, if reforestation was given a public profile similar to the one enjoyed by energy conservation, provincial governments would be able to commit more resources to forest management.

Insufficient Technical Knowledge

Investments in forest management are hindered by inadequate technical knowledge. It was observed that industry and government require time:

- to develop improved species which are able to flourish in the Canadian climate and soil, thereby reduce the rotation cycle and increase yields;

- to determine the most appropriate silvicultural treatments for various species in the different regions of the country;

- to produce skilled, knowledgeable, and experienced practitioners to carry out forestry programs;

Acting upon an inadequate knowledge base, it was suggested, could result in a misallocation of scarce investment funds.

Manpower Availability and Training Facilities

Industry representatives in every region of the country raised the concern that there are insufficient numbers of well-trained professional foresters as well as field technicians. Moreover, there are concerns that the supply of trained manpower is not increasing at a rate sufficient to meet projected requirements based upon the forest management goals of the 1980's. Training facilities were also cited as constraints to generating the required manpower.

Fire Protection

Several companies made the point that inadequate fire protection and control facilities are impediments to greater forest management investment. Examples were provided concerning the devastation caused by fires in the summer of 1980, especially in Quebec and Ontario. Several industry officials expressed reservations over investments in certain locations which appear to have inadequate fire protection and control facilities available.

Research in Insect and Disease Control

As in the case of fire protection, several industry officals, most noticeably in the Maritimes where forest loss due to insects has been great, argued that the commitment to forest management suffers from potential losses from natural causes. Without better research in control of insects and into the prevention and cure of disease, investment in forest management will be inhibited. In British Columbia, provincial officials stressed that forest resource research ought to be conducted on a long term basis. These officials expressed concern with the federal government's decisions in the past to reduce funding for research in forest protection. eg. the federal government cutback in funding for the forest insect and disease surveys.

Selected Shortages of Nurseries and Nursery Stock

In some parts of the country, we learned that renewal programs were not advancing due to the lack of seedlings, seed orchards, nurseries, etc. In British Columbia, for example, the provincial government's production of seedlings is well short of requests from industry, and accordingly the province now permits the private sector to operate nurseries. These types of physical bottlenecks play an important role in limiting the efforts of the provinces and industry.

VIII - MAJOR PERSPECTIVES

The industry and the provinces share the common objective of sustaining a long term supply of wood at internationally competitive costs. At the same time, both are faced with similar and interrelated factors which impede the achievement of that objective. This section focuses discussion on these common impediments as a means of identifying basic thrusts that federal policies should take.

VIII.1 Common Perspectives

In our assessment, the following are the most significant impediments to increased forestry investment.

1. The Need for Long Term Commitment

Long term contractual commitments between the Federal and Provincial Governments and between government and industry would appear to be the most compelling influence in achieving a higher level of investment in forest management. Pervading all the discussions with provincial officials and the private sector was the common desire expressed for long term commitments to greater forest management. Each advocated long term commitments for their own separate and different reasons. The industry is concerned with long term security of supply of wood at competitive costs. Ideally, the industry believes that ownership of land and/or timber is a prerequisite for investing its own resources in forestry. Realistically, the industry expected that the provinces would provide long term access to wood in exchange for industry's participation in reforestation. Provincial officials would prefer longer term budgetary commitments from their own provincial governments as well as from the federal government, the latter source acting as a supplement to augment the province's own particular efforts.

2. Capacity to Absorb Funds and Implement Programs

Our interviews revealed that, with a limited number of exceptions, current forestry programs are probably as large as can be managed. Given individual provincial/regional limitations on trained manpower to implement programs and limitation on physical resources (eg. the availability of seedlings), financial resources may not be the prime factor restraining investment in forestry. Moreover, there is an expressed concern that, if programs are expanded too quickly, government and industry may not be able to absorb additional funding in the most efficient way.

3. Needs for Greater Public Support

As forest management programs enter a new era, those directly concerned with these programs wonder if there is sufficient understanding and support by the public. To date, the Canadian public appears to be poorly informed with regard to the need for greater investment in forestry. A well informed base of public opinion, in the view of many interviewed, is a prerequisite to encouraging government and industry to make the long term commitments necessary for successful forest management.

4. Nature of the Market for Roundwood from Small Woodlots

The private woodlot owners have a special role in each of the provinces. In New Brunswick and Nova Scotia, where small private woodlots have a potential to supply as much as 30 to 50% of the total industry wood requirements, special efforts related to organization, delivery of forestry silviculture and management programs and marketing will need to be encouraged. Much has been done and much more needs to be done over time in order to influence individual attitudes and bring more acreage into a more intensively productive system.

A similar situation exists in Ontario and Quebec, however, the small wood lot is not as critical to the total supply potential. However, changes could occur if current studies into the use of hybrid poplar and forest residual

material as wood biomass for energy production prove both feasible and economically viable and currently marginal farm land is brought into production as plantations. Similarly, increased demands for wood with improved harvesting and distribution systems could increase the significance of the role of the small woodlot in providing industrial wood fibre and provide a need for improved forest management programs to the small woodlot owner.

5. Insufficient Research and Development

Research and development acctivities with respect to genetics, silviculture, insect and pest control were considered by many individuals interviewed to be less than adequate to cope with specific provincial needs. In particular, in the Atlantic region, the need for improved specifications for silviculture was stressed.

VIII.2 Federal Action is Required

The remaining question concerns to what degree can the provinces and the industry overcome these common impediments? Are these impediments surmountable given the policies and programs already in place at the provincial level?

The Maritime provinces clearly cannot eliminate the shortages on their horizon without federal financial assistance. The resources available to these provinces from their own provincial revenues sources are inadequate, and without the current level of federal funding little or no forest management could take place.

Quebec and Ontario, although each has a relatively larger revenue base upon which to develop forestry programs, nevertheless are and can continue to benefit from federal assistance.

Manitoba and Saskatchewan continue to require federal assistance in developing and implementing programs. Given its strong financial position,

Alberta is unlikely to require federal supplementation to their programs. Finally, British Columbia, although probably the most advanced province in terms of experience with forest management, does, nevertheless, require selected assistance from the central government.

Above all else, the provinces and the industry are clearly in need of the support of the federal government in convincing the public and their elected representatives of the urgency in developing a concerted effort nation-wide to shift provincial funding priorities in the direction of greater forest management investment.

In the next section, we review the constraints on and the opportunities for the federal government to help overcome these major impediments.

IX - CONSTRAINTS AND OPPORTUNITIES FOR FEDERAL POLICY IN FORESTRY

The federal government has a direct interest in health of the Canadian forest products industry. The importance of the industry in terms of jobs, regional development, exports and the creation of national income strongly suggests that the federal government, in the interest of all Canadians, has an important role to play in helping industry prosper. This section reviews the constraints and opportunities related to federal policy in forest management.

IX.1 Constraints to Federal Policy Initiatives

Jurisdictional

The British North America (BNA) Act clearly establishes the primary jurisdictional powers for the management of provincial Crown land with the individual provinces. Provincial consent is required for federal action affecting provincial Crown land. More significantly, provinces vary in their policies regarding land management with respect to land tenure, taxes, resource pricing, etc. This wide variation can make it difficult for the federal government to achieve a consensus from the provinces on the best policy approach to adopt in any specific area of forest management.

Lack of Clear Federal Visibility

As the lead agency, the Canadian Forest Service (CFS) of Environment Canada acts as a source of forestry expertise and carries out research. Specific aspects of federal policy in forestry is actually implemented by a number of Departments, including Industry, Trade and Commerce, Regional Economic Expansion, Energy, Mines and Resources, Manpower and others. However, the federal government does not occupy a high profile in the forest sector. The industry usually looks to the provinces for changes in forest management policy, largely because the provinces are the owners and managers of a large portion of the resource.

Funding Restraints

The federal forestry authorities, not unlike their provincial counterparts, do not have complete control over expenditures for forestry. The overall level of expenditures in forestry is not directly under their control but are dependent on decisions made at cabinet whose other social and economic objectives and programs contend for limited funds. Moreover, recent political decisions to contain federal spending growth adds to these budgetary limitations.

IX.2 Federal Government Opportunities to Effect Change

The federal government is not without avenues for strengthening the forest products sector. The federal government has jurisdictional powers to influence the industry by means of:

- reductions in corporate income taxes;
- increasing DREE grants and other cost-sharing programs;
- expanding manpower training facilities and programs;
- increasing R & D funding;
- promoting exports.

In fact, the federal government has and continues to aid the industry in mill modernization and expansion, manpower training, promoting exports, and supporting R & D activities. While these efforts have served to improve the industry's long term viability, they have been largely directed towards expanding the utilization of the resource base rather than renewing Canada's forest resources. The policy challenge now lies in the direction of increasing Canada's timber supplies. In the next section, we consider Federal policy options available for complimenting provincial and private activities to ensure an adequate long term supply of wood.

X - FEDERAL POLICY OPTIONS

In this section we discuss federal policy options in terms of their ability to overcome existing impediments to greater forest management investment.

The prime objective of federal policy is to convince key participants to increase this commitment. The federal role should be designed so as:

(a) to convince each participant to step up its own efforts;

(b) to supply additional funding to the provinces, when and where appropriate;

(c) to facilitate and possibly speed up the implementation of investment programs; and

(d) to coordinate the activities of all participants toward the achievement of national goals.

X.1 Federal Policy Action in Short-Term

The provinces are laying the foundations for improvements in forest management in a variety of ways. There is a trend towards greater provincial funding and implementation of forest management practices. Having prime responsibility for forest management, the provinces believe that they are heading in the right direction and that it is only a matter of time until their policy initiatives bear fruit. Officials in Ontario and Manitoba, for example, believe that their respective Forest Management Agreements provide the industry with the appropriate environment in which to undertaken investment in forest management. British Columbia officials also anticipate greater levels of investment as a result of incentives provided under Sections 52 and 88 of the new Forests Act.

Provincial and industry representative from every province indicated that current forestry programs are at a scale consistent with the available manpower resources, equipment/plant and nursery stock.

Most provinces and several larger companies have plans to expand existing forest programs as more trained manpower and more nurseries and seedings become available. These increases in human and physical resources will require both additional financial resources and elapsed time to deliver their full impact.

Accordingly, in the short-term, the federal policy options fall into two areas:

1. Financial Assistance

   The continued provision of financial assistance to the provinces to enable them to eliminate or reduce bottlenecks to the implementation and/or expansion of forestry management programs. In the main, these bottlenecks can be reduced with additional fundings through existing federal/provincial programs, although it is necessary to recognize that time is required in some cases to eliminate these constraints. At least, the process of attacking these bottlenecks should begin immediately and the commitment given that efforts will continue over the medium to longer term to eliminate other such constraints.

2. Communication

   The development and implementation of communication/education programs to upgrade the understanding of all involved publics in the significance of the forestry sector and its future needs.

The short-term continued federal financing of programs through DREE agreements and existing manpower programs are adequate techniques. Improvements can be made by more carefully integrating the provincial

forestry objectives, needs and delivery capabilities with the federal programs. The Canadian Forestry Service should be given a more active coordination role in this regard. Also, whenever practical, the federal funding should be conditional on increased industry and provincial participation.

X.2 Federal Policy Action in the Long-Term

Over the long-term, federal action should be aimed at promoting higher levels of provincial and industry forest manangement investment by means of:

a) developing and delivering public information programs explaining the need to reforest our lands in the interest of maintaining a viable industry;

b) assisting the provincial forestry officials in developing a strong socio-economic case for increased provincial funding; the backbone to an improved forest program is a clear commitment from provincial Cabinets to support forest management and related programs on a continuing basis.

c) explaining within industry circles the facts concerning the current rate of depletion and the implications for the industry's long term future.

d) giving widespread dissemination to the technical possibilities of shortening the growth cycle and thereby increasing the productivity of the forest lands.

e) maintaining and encouraging research activities in genetics, forest management techniques, pest and disease control.

f) providing a continued stimulus and challenge to provincial forest management planning to ensure that it is practical and that such planning is carried out in a manner that will permit an assessment

of the sum total of provincial/industry planning against a set of national objectives.

We believe that the result of these federal actions would be the development of a needed long term commitment by all participants in forestry. This commitment is only possible once everyone believes that there is a need for and benefits to be derived from increased investment.

X.3 Need for Targets

Up to this point, we have analyzed impediments to higher levels of forestry investments and suggested policy strategies at the federal levels. A final comment concerns the need to establish specific targets for forest management programs on a national level. These targets should serve as a guide to gauging the success with which the provinces and private industry are achieving with respect to their own programs and the degree of additional federal effort required. These targets would provide a central focus for the federal and provincial governments and the private sector in developing new policy strategies while continually evaluating existing policies.

These targets should include specific forest management activities such as: site preparation; stand establishment; stand tending; protection, etc.

The determination of specific targets requires an analysis of:

- Canada's total supply potential based on maximum sustainable yield estimates;
- forecasted demand for Canadian wood and forest products in domestic and international markets;
- technological changes in harvesting and processing of forest resources and their impacts on wood supply conversion;

- changes in the productivity of the forest arising out of improved genetics and forest management practices.

Having developed the overall estimate and required forest management investment, the federal government should monitor progress at the provincial and industry level in achieving the target levels of investment. Targets should be reviewed every 5 years in light of new policy developments at the provincial level, changes in market conditions and advances in technology.

APPENDIX A

TERMS OF REFERENCE

TERMS OF REFERENCE FOR A STUDY OF FACTORS LIMITING INVESTMENT IN FOREST MANAGEMENT

BACKGROUND

Background information for this study is largely contained in the Discussion Paper, "Federal Policy on the Canadian Forestry Sector" and the document prepared for the Canadian Council of Resource and Environment Ministers (CCREM) entitled, "Forestry Imperatives for Canada". It is generally agreed that the level of forest management, and in particular, forest renewal, is insufficient to meet economic and social goals of the provincial and federal governments. However, some critical issues remain to be settled, namely, (1) What is the appropriate level of forest management and how should it be determined? (2) Who should finance it and ultimately who should pay for it? (3) What mechanisms should be used to fund it?

The Department of the Environment, in consultation with other concerned federal departments, wishes to examine, among other things, ways in which the federal government within existing budget levels could influence provinces and the private sector to increase reforestation and improve forest management.

The Department of the Environment in consultation with the Department of Industry, Trade and Commerce wishes to examine strategies that might be followed to upgrade the natural resource base, assure adequate mission-oriented federal research, and develop new markets for resources.

PURPOSES

This study will complement and address critical issues not covered by "A Study of Funding Mechanisms for Forest Management", recently commissioned by CCREM. Specifically, it will investigate the impediments limiting provincial

and private funding of forestry and determine what federal options and strategies could lessen or overcome these constraints.

To this end,

1. It will determine what indicators should be relied upon to determine the optimum level of annual expenditure on forest management from a national perspective. It will establish whether these are readily available or need developing.

2. It will determine why expenditures on forest management by public and private forest land owners are at levels considered to be insufficient to satisfy the long term interests of the country.

   The investigation will include but not be restricted to an examination of:

   a) Factors influencing the performance of provincial forest management agencies including:

      (i) The degree of control that provincial forest management agencies exercise over the collection of revenues and the expenditure of these monies, and the degree of control over these matters exercised by other provincial agencies, eg. finance and treasury.

      (ii) Current resource pricing policies, their influence on forest management funding and their appropriateness for ensuring adequate resource supplies for the future.

      (iii) The degree, if any, to which federal funds provided under federal-provincial agreements have simply substituted for provincial funds.

(iv) The importance of fluctuations in provincial government forest resource revenues due to fluctations in forest products markets.

b) Factors influencing the performance of forest management by the private sector, including:

(i) The forms of forest land tenure normally assigned to Crown Land tenants that usually afford little or no equity in replacement timber crops.

(ii) Provincial timber pricing practices.

(iii) Sensitivity of budgeting decisions to the present costs of reforestation and stand improvement work; the cost of funds; the high risk of timber crop loss or damage through fire, pest, and storm; and the uncertainty respecting future timber crop prices associated with the long period involved in growing traditional timber crops.

(iv) The nature of the market for stumpage and roundwood produced by small woodlot owners.

(v) Property taxation and provincial forestry incentive programs.

(vi) Adequacy and compatibility of Income Tax provisions and other federal initiatives.

3. It will suggest federal options and strategies which might overcome the constraints to greater investment in forest management.

APPENDIX B

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APPENDIX C

Check list of topics for Interview Program

Provincial

Industry

Forest Management Study

Provincial Questionnaire

Topic: General

1. Does the government perceive public opinion is concerned with forest management?

2. Have attitudes within government changed recently regarding spending on forest management?

Budget Allocation

3. How important are the sources of funding for forest management?

   a) general provincial revenues
   b) stumpage fees
   c) federal grants

4. What criteria are used by provincial treasurers to allocate funds for forest management programs?

5. What is the influence of cyclical savings in forest resource revenues on decisions to fund programs?

Stumpage Charges

1. How do stumpage revenues influence total funding to forest management?

2. Comment on their appropriateness for meeting goals of investment in reforestation, silviculture, etc.?

3. Identify barriers at provincial level working against changes in stumpage fees and their structure?

Federal/Provincial Funding

1. How significant are DREE grants to meeting provincial forest management targets?

Private Land

1. What policies/programs are in effect to assist private wood lot operations? What type of responses have they received?

2. What impact does private stumpage fees have on revenues for expenditures by private land owners?

Forest Management Study

Industry Questionnaire

Topic: General Planning Issues

1. Has there been recent changes in corporate views regarding the importance in investing in forest management? If so, explain factors which produced this change in policy and when did the change occur?

2. In the development of a corporate long range plan or strategy, how far out into the future are investment plans developed?

Rate of Return on Forest Management

3. How sensitive are decisions on forest management expenditures to:

   a) basic costs of reforestation
   b) current costs of financing
   c) risks of loss due to fire, disease, insects
   d) variations in timber prices
   e) income tax provisions

4. Have you conducted a rate of return analysis on forest management expenditures? What is the range of this estimate?

Possible Policy Changes

How can the rate of return in this area be improved through changes in

   a) income tax provisions
   b) stumpage rate system
   c) land tenure agreements
   d) real price of wood (i.e. discounted for inflation)
   e) Federal/Provincial funding initiatives

APPENDIX D

List of government officials, corporate executives and representatives from various groups interviewed

CANADA

L. Farber	Tax Policy Legislation Branch, Finance Canada
G. Ouellet	Renewable Resources, Economic Programs and Government Finance Branch, Finance Canada
W. Calow	Primary Wood Products Division, Resource Industries Branch, Finance Canada
E. Shaver	Industry and Natural Resource Division, Treasury Board
J. Mirault	Incentive Evaluation Programs, Department of Regional and Economic Development

ALBERTA

	Alberta Treasury
R. Goodky	Analyst
R. Moore	Analyst
	Department of Energy and Natural Resources
F. McDougal	Deputy Minister, Renewable Resources
A. Brennan	Ass't. Deputy Minister
A. Rytz	Executive Director, Alberta Forest Products Association
E. Gillespie	Forest Revenue

SASKATCHEWAN

	Saskatchewan Tourism and Renewable Resources
S. Price	Reforestation Division Forestry Branch

MANITOBA

	Department of Natural Resources
H. P. Laws	Director, Forestry Branch

BRITISH COLUMBIA

B. Devitt	Chief Forester, Pacific Forest Products Ltd.
G. S. Nagle	President, Nawitka Renewable Resource Consultants Ltd.
J. A. Rainer	V. P. Wood Supply & Products Group Crown Zellerbach Canada
	Canadian Forest Products Ltd.
A. G. Armstrong	V. P. Finance
I. Stark	Division Controller
W. G. Burch	V. P. Timberlands & Forestry, B. C. Forest Products Ltd.
	Canadian Cellulose Ltd.
D. Watson	President & Chief Executive Officer
R. Jewesson	V. P. Woodlands & Forestry
J. Toovey	Chief Forester, B. C. Forest Products
	MacMillan Bloedel Ltd.
J. Dickinson	V. P. Planning and Analysis
G. Ainscough	V. P. & Chief Forester

BRITISH COLUMBIA cont'd

J. Little	V. P. Woodlands, Northwood Pulp Ltd.
G. Hilliard	V. P. Timberlands, Weyerhauser Canada
J. Shaw	Executive Director, Council of Forest Industries, B. C. (Interior)
B. Palmer	Woodbridge, Reed and Associates
J. Potter	Woodbridge, Reed and Associates
K. Watson	Peat, Marwick and Mitchell & Co.
	Ministry of Finance
L. I. Bell	Deputy Minister
A. Eastwood	Director, Financial Analysis
P. Halkett	Senior Analyst, Treasury Board
	Ministry of Forests
M. Apsey	Deputy Minister,
E. Knight	Director, Strategic Studies
H. Lewis	Manager, Economic Section
B. Long	Comptroller

ONTARIO

A. Zimmerman	Chairman, Fraser Companies Ltd.
K. Greaves	Executive Director, Ontario Forest Industries Association
	Abitibit-Price Inc.
J. K. Stevens	V. P. Corporate Development,
D. Naysmith	Director of Forestry
	Great Lakes Forest Products
M. D. Seeley	Executive V. P. Operations
M. R. McKay	V. P. Woodlands Operations
W. S. Moore	Manager, Forestry Operations
G. K. Seed	Manager, Woodlands Operations
T. E. Inglis	President, Great West Timber Ltd.
T. Salerno	Senior Economist, Taxation & Tiscal Policy Branch, Ontario Ministry of Treasury, Economics & Inter-Governmental Affairs
	Ontario Ministry of Natural Resources
A. Peacock	Executive Coordinator
K. A. Armson	Chief Forester
D. Cope	Analyst, Forest Resources Group
W. Tumasz	Ontario Management Board Secretariat, Resources Development Branch

QUEBEC

G. Paille	Director of Woodlands Research, Canadian International Paper Co.
	Canadian Pulp & Paper Association
H. Hart	President,
D. Wilson	Director Economic & Statistical Services,
I. Chenoweth	Vice-President
D. MacGregor	Manager Woodlands Section,
G. Minnes	Secretary,
E. Blanchard	Manager Government Affairs
	Domtar Inc.
D. Speirs	V. P. Finance & Corporate Development
A. Fleming	V. P. Woodlands Section
H. Geoffrion	V. P. & General Manager Woodlands Division, Kruger Pulp & Paper Co.
	Consolidated Bathurst Inc.
A. Grundy	V. P. Planning & Systems,
L. Parnell	Director of Corporate Planning
J. McLeod	V. P. Woodlands, Consolidated Bathurst
	Ministry of Energy & Resources
J. C. Mercier	Associate Deputy Minister, Lands & Forests
R. Deschenes	Forest Economist,
C. Godlent	Director Planning Department

PRINCE EDWARD ISLAND

F. Matheson — Director, Forestry Services Branch, Department of Agriculture and Forestry

NEW BRUNSWICK

	J.D. Irving Ltd.
J. K. Irving	President,
D. Oxley	Woodlands Manager
	Department of Natural Resources
J. Hermelim	Director, Forest Extension Service
R. S. Watson	Executive Coordinator, Policy and Planning
R. Redmond	Director, Forest Management Branch,
D. S. Curtis	Secretary Manager, N. B. Federation of Wood Producers
D. Lockhart	Director, Forest Products Association
A. Parks	Cabinet Secretariat on Economic Development

NOVA SCOTIA

	Department of Lands & Forests
J. Potter	Assistant Senior Director, Program Planning
E. Bailey	Director, Forest Resources Planning
R. Lord	Director, N. S. Woodlot Owner Association
M. Rainer	Management Board, Government of Nova Scotia